USTALOV, V., kapitan

To the sons about the feats of their fathers. Komm. Vooruzh. Sil 46 no.8:64 Ap '65. (MIRA 18:6)

USTALOV, V.A.

137-58-4-6763

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 66 (USSR)

AUTHORS: Mironov, M.G., Yeliseyev, I.S., Mel'nikov, A.G., Kroneberg, D.A., Sereda, B.K., Ustalov, V.A.

TITLE: Forty Years of Copper Industry in the Ural Region (Sorok let mednoy promyshlennosti Urala)

PERIODICAL: Byul. tsvetn. metallurgii, 1957, Nr 19-20, pp 55-60

ABSTRACT: Bibliographic entry

1. Copper industry--USSR

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SOV/136-59-4-1/24

AUTHOR: Ustalov, V.A., (Deceased)

TITLE: Contributions of the Branch Institutes of Ural to the Development of Non-Ferrous Metallurgy (Vklad otraslevykh institutov Urala v razvitiye tsvetnoy metallurgii)

PERIODICAL: Tsvetnyye metally, 1959, Nr 4, pp 1-4 (USSR)

ABSTRACT: This is a review of the 1958 activities of the Unipromed' and Uralmekhanobr design and scientific research institutes of the Sverdlovskiy sovnarkhoz (Sverdlovsk Economic Council). These activities were concerned with non-ferrous metallurgy in some economic regions of Kazakhstan and Siberia as well as Ural. The Uralmekhanobr Institute, in collaboration with works personnel, effected improvements in ore beneficiation practice at the Krasnoural'skaya (Krasnoural'sk), Kirovgradskaya (Kirovgrad), Pyshminskaya (Pyshma), , Sredne-Ural'sk, Karabashskaya (Karabash), Zolotushinskaya (Zolotukha) and Tuimskaya Beneficiation Works. New equipment such as the type UM-500 high productivity flotation machine was developed. The Unipromed' Institute has carried out research and design work for the Pyshma, , Sredne-Ural'sk, Kirovgrad and Mednogorsk copper-smelting works. In

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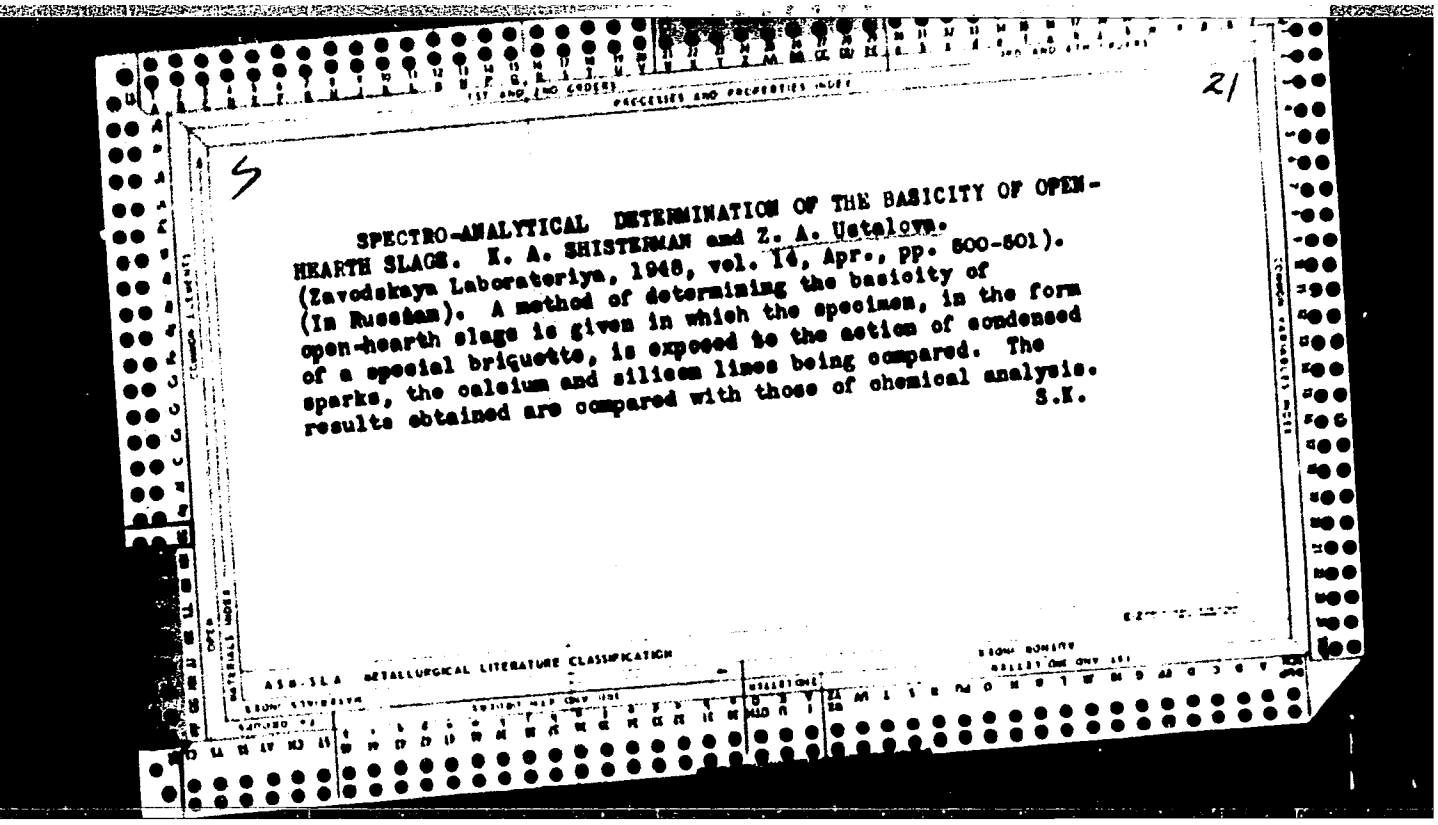
Contributions of the Branch Institutes of Ural to the Development of Non-Ferrous Metallurgy

collaboration with the Irkutskiy mashinostroitel'nyy zavod (Irkutsk Machine Construction Works) a new type of grab is being designed. Both the institutes have done considerable work in the field of automation and instrumentation.



S

21

SPECTRO-ANALYTICAL DETERMINATION OF THE BASICITY OF OPEN-HEARTH SLAGS. K. A. SHISTERMAN and Z. A. Ustalova. (Zavodskaya Laboratoriya, 1948, vol. 14, Apr., pp. 500-501). (In Russian). A method of determining the basicity of open-hearth slags is given in which the specimen, in the form of a special briquette, is exposed to the action of condensed sparks, the calcium and silicon lines being compared. The results obtained are compared with those of chemical analysis. S.K.

USTAMIRZAYEVA, A. I.

Dissertation: Grad Stud -- "The Process of Stretching in the Rear End of a Single-Belt Drawing Apparatus." Cand Tech Sci, Moscow Textile Inst, 17 Jun 54. Vechernyaya Moskva, Moscow. 8 Jun 54.

SO: Sum 318, 23 Dec. 1954

USTANOV, Kh. U.

USSR/Chemistry - Saccharides

Card 1/1 Pub. 147 - 5/27

Authors : Ustanov, Kh. U., and Kargin, V.A.

Title : Sorption of water on melted glucose and caramel mass

Periodical : Zhur. fiz. khim. 28/2, 224-228, Feb 1954

Abstract : The sorption and desorption of water by amorphous glucose and caramel mass was investigated at 25 and 50° C and compared with the sorption and desorption of cellulose. In contrast to cellulose the glassy sugars at low relative vapor pressures do not adsorb any water. Sorption begins at a specific much higher vapor-pressure after which it increases continuously and reaches values exceeding that of cellulose. The greater water sorption by cellulose is due to the sturdy chains of its macromolecules which prevent diffusion of the water. The mechanism of water sorption by glassy sugars is explained. Three USSR references (1937-1952). Tables; graphs.

Institution : Academy of Sciences Uzbek-SSR, Chemical Institute, Tashkent

Submitted : April 1, 1953

USTANOVSKAYA, L. T.

Forests and Forestry - Ukraine

Forests of Staro-Berdiansk., Priroda, 41, No. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, May 1952. UNCLASSIFIED.

USTAR, Majda

Microbiological and patho-anatomical considerations on pulmonary resection in tuberculosis. Tuberkuloza no.1:13-19 '62.

1. Bolnica za tuberkulozu i plucne bolesti Topolsica (upravnik: prim. dr. I. Cestnik).

(PNEUMONECTOMY) (TUBERCULOSIS PULMONARY)

BENEDIK, M.; USTAR, M.

Surgical therapy of chronic empyema in pulmonary tuberculosis.
Tuberkuloza 16 no.3:263-265 My-Ag '64

1. Bolnica za tuberkulozu Topolsica; Institut za tuberkulozu Golnik; Hirurska klinika Ljubljana.

USTAR, M.; BENEDIK, M.; CESTNIK, I.

Results of resection in the treatment of pulmonary tuberculosis. (Analysis of 300 patients treated by pulmonary resection during the period of 1956-1960). Tuberkuloza 16 no.1:11-21 Ja-F '64.

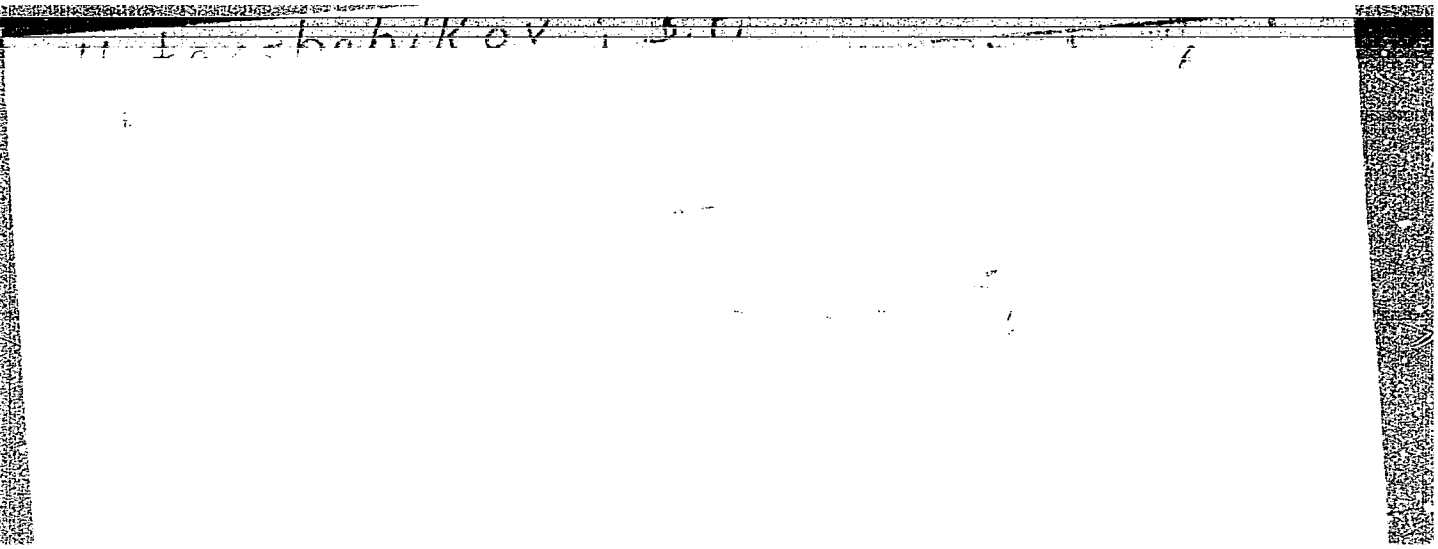
1. Bolnica za plucnu tuberkulozu Topolsica (Predstojnik: prim. dr. I. Cestnik).

SEKULIC, Bozidar, Prim., dr.; USTAVDIC, Muhamed, dr.; NOVAKOVIC, Momcilo, dr.

Age factor in indications for tonsillectomy. Med. arh., Sarajevo 9 no.5:77-84 Sept-Oct 55.

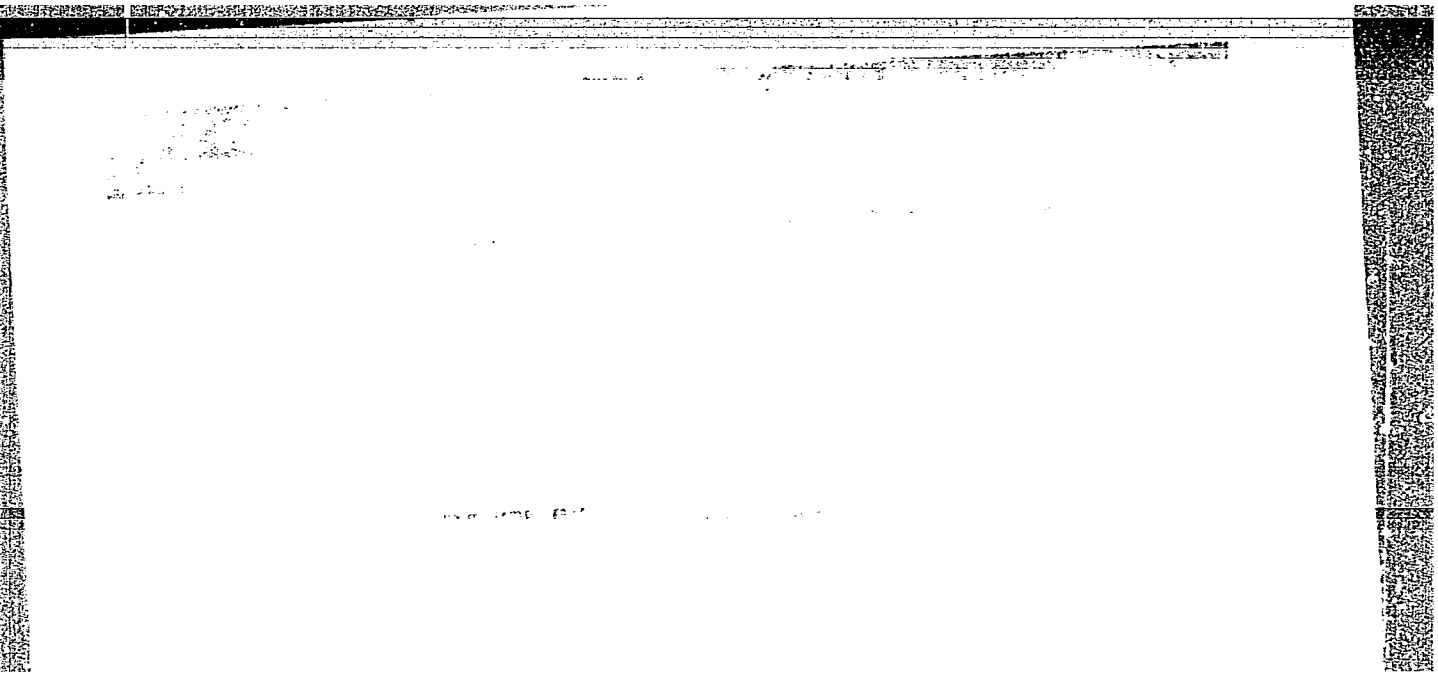
1. (Rad Odelenja za bolesti uva, nosa i grla Gradske bolnice u Beogradu. Sef: Prim. dr. Bozidar Sekulic).

(TONSILS, surg.
in child., indic. in relation to age factor. (Ser))
(AGING, pathol.
age factor in tonsillectomy in child. (Ser))



formaldehyde

1.4338, and [ClCH$_2$CHClCH$_2$CH$_2$]$_2$O



APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001858220002-3"

USTAVSHCHIKOV, B. F.

5(1) PHASE I BOOK EXPLOITATION SOV/2927

Yaroslavl'. Tekhnologicheskiy institut

Uchenyye Zapiski, Tom II (Scientific Notes, Vol. 2) ... copies printed.
Yaroslavl'. ... Poligraficheskiy kombinat, 1957, 237 p.

Editorial Staff: A.I. Zaikina, Candidate of Historical Sciences; Docent M.M. Makarov, Candidate of Technical Sciences; Professor M.I. Farberov, Doctor of Technical Sciences;

Resp. Ed.: Professor Yu.S. Musabekov, Doctor of Chemical Sciences

Secretary-Scientist: B.F. Ustavshchikov, Candidate of Chemical Sciences

PURPOSE: This book is primarily intended for industrial chemists and technologists interested in the kinetics of chemical reactions and their related physical processes.

COVERAGE: The twenty-two articles of this collection deal mainly with industrial processes for the preparation of organic compounds, problems of heat physics and general mechanics related to these processes, and with industrial chemical equipment. No personalities are mentioned. References are given after each article.

TABLE OF CONTENTS:

CHEMISTRY

HISTORY OF CHEMISTRY

APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001858220002-3"

Ustavshchikov, B.P.

82147

SOV/81-59-6-20403

Translation from: Referativnyy zhurnal, Khimiya, 1959, Nr 6, pp 384-385 (USSR)
5-3831

AUTHORS: Farberov, M.I., Ustavshchikov, B.P., Kut'in, A.M., Vernova, T.P., Yarosh, Ye.V.

TITLE: The Methods of Technical Synthesis and the Application of 2-Methyl-5-Ethylpyridine and 2-Methyl-5-Vinylpyridine

PERIODICAL: Yaroslavsk. prom-st' (Sovnarkhoz Yaroslavsk. ekon. adm. r-na), 1958, Nr 3, pp 15 - 21

ABSTRACT: In the condensation of 1 mole of paraldehyde and 4 moles of 40-60% (better 50%) aqueous solution of NH_3 in the presence of a catalyst (organic or inorganic salt) taken in the quantity of 1-2% based on the weight of the paraldehyde (20-30 min, 260°C, pressure 80-100 atm) 99% pure 2-methyl-5-ethylpyridine (I) is obtained, yield 75-80%, b. p. 176.7°C, $n^{20}D$ 1.4974, d_4^{20} 0.9189; as impurities α- and γ-picoline, higher pyridines and resins are formed. The reaction proceeds in the following order: $4CH_3CHO+NH_3 \rightarrow N=C(CH_3)CH=CHC(C_2H_5)=CH+4H_2O$. I, diluted by water steam in the molar ratio 1:12-1:20 is dehydrogenated in the presence of industrial dehydrogenation catalysts (K-10 and K-12) consisting of Zn, Cr, Fe and Al oxides activated by K_2O for 2

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The Methods of Technical Synthesis and the Application of 2-Methyl-5-Ethylpyridine and 2-Methyl-5-Vinylpyridine

hours at 575-600°C and a volumetric rate of 500-600 ml per 1 l of catalyst in 1 hour, 97-99% pure 2-methyl-5-vinylpyridine (II) is obtained, yield 20-25% based on I having passed through, or 70-75% based on I decomposed, b. p. 75°C/15 mm, $n^{20}D$ 1.5454, d_4^{20} 0.9579. The content of II in the catalyzate is 23-27%, the yield of the catalyzate 89-91%. Pyridine, picolines, 2,5-dimethyl-, 3-ethyl- and 3-vinylpyridine are formed as impurities. II is very inclined to polymerization. S, $C_6H_2(OH)(NO_2)_3$, α-nitroso-β-naphthol and methol (sulfate salt of methylaminophenol) are used as stabilizers of II. In the process of II separation S is used as stabilizer and methol for storing (in concentrations of up to 0.001 weight %). In the case of oxidizing I by $KMnO_4$ or $Cu(NO_3)_2$, 2,5-pyridine-carboxylic acid (yield 60-70%, m. p.236°C) is obtained which is converted to nicotinic acid by decarboxylizing with a yield of ~100% (m. p. 163°C). The dimethyl ester of 2,5-pyridine-dicarboxylic acid (m. p. 163°C) after reesterification by ethyleneglycol is condensed in the presence of $ZnCl_2$ into a high-polymeric resin. I with CH_2O forms 5-ethyl-2-vinyl- and 5-ethyl-2-(β-oxyethyl)-pyridine with a high yield. I is easily hydrogenated with a yield of ~100% by Na in butyl alcohol,

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The Methods of Technical Synthesis and the Application of 2-Methyl-5-Ethylpyridine and 2-Methyl-5-Vinylpyridine

and also catalytically (in the presence of Ni-catalysts) in 2-methyl-5-ethyl-piperidine, b. p. 160-161°C, $n^{20}D$ 1.4530, d_4^{20} 0.8559. It is a monomer for the industry of synthetic rubber, it can be used in the production of plastics and synthetic fibers.

Ya. Danyushevskiy

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5(1, 3) SOV/153-58-5-16/28

AUTHORS: Farberov, M. I., Ustavshchikov, B. F., Kut'in, A. M., Vernova, T. P., Yarosh, Ye. V.

TITLE: Technical Synthesis of 2-Methyl-5-Ethyl Pyridine and 2-Methyl-5-Vinyl-Pyridine, and Their Fields of Application (Tekhnicheskiye sintezy 2-metil-5-etilpiridina i 2-metil-5-vinilpiridina i oblasti ikh primeneniya)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya, 1958, Nr 5, pp 92-99 (USSR)

ABSTRACT: The authors took the synthesis of 2-methyl-5-ethyl pyridine (MEP) from acetaldehyde and ammonia with a further dehydrogenation to 2-methyl-5-vinyl pyridine (MVP) as a basis for the working out of technical synthesis of these two substances. The papers recently published in patents (Refs 11-13) tend to show an intense elaboration of these reactions. There are, however, no publications on the first, and especially on the second stage of this process. The authors first clarified the most important rules governing the reaction between acetaldehyde and ammonia for the purpose of an industrial utilization. 1) S y n t h e s i s o f 2 - m e t h y l - 5 - e t h y l p y r i d i n e. Acetaldehyde is used as paraldehyde. This

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Technical Synthesis of 2-Methyl-5-Ethyl Pyridine and 2-Methyl-5-Vinyl Pyridine and Their Fields of Application

offers much higher yields. Stoichiometric ratios (1.33 mol paraldehyde per 1 mol ammonia) could, however, not secure a sufficiently high MEP yield. The optimum ratio amounts to at least 4 mol ammonia per 1 mol paraldehyde. The presence of larger quantities of water has a favorable effect. The opinions on the formation mechanism of MEP in literature contradict each other (Ref 14). Up to 30 different salts, among them $ZnCl_2$, $FeCl_2$, $SbCl_3$, $CoCl_2$, $NiCl_2$, CH_3COONa, NH_4Cl, CH_3COONH_4, NH_4F, $NH_4F.HF$, KF, KHF_2 and others served as catalysts. A catalyst was selected which corresponds to the technical process. Its concentration usually amounts to 1-2% of the paraldehyde. The reaction takes also place without catalyst, however, with much smaller yields.

2) Dehydrogenation of 2-methyl-5-ethyl pyridine. Synthesis of 2-methyl-5-vinyl pyridine. The best industrial dehydrogenating catalysts served for dehydrogenation: K-10 and K-12, which consist of zinc oxide, chromium oxides, iron and aluminum oxides, activated with potassium oxide. The partial pressure is

best decreased by dilution with steam. Figure 2 shows typical dehydrogenation curves of MEP (catalyst K-12 at 575°). Under optimum conditions the MVP yields per passed MEP amounted to 20-25%, and per decomposed MEP to 70-75%. 3) Isolation and stabilization of MVP, i.e. the separation of MEP from MVP is a difficult process as their boiling points are close to each other (176.7 and 187°). Furthermore MVP is easily polymerized. For this reason a high vacuum is required. Sulfur, picric acid, α-nitroso-β-naphthol and sulfurous methyl amino phenol (Figs 3,4) were the best stabilizers of some dozens investigated. 4) Equipment and apparatus for the MVP synthesis. Figure 5 shows a corresponding scheme. 5) The scheme (p 98) shows some more synthesis proceeding from MEP (Refs 15,16). 6) Finally, rubber and latex types on MVP basis are discussed. Some of them show better adhesion to cord from viscose and nylon, high elasticity, frost resistance, and resistance to wear and tear. Some branches of industry announce at present a high demand for those rubber types.

There are 5 figures and 18 references, 6 of which are Soviet.

Technical Synthesis of 2-Methyl-5-Ethyl Pyridine and 2-Methyl-5-Vinyl Pyridine, and Their Fields of Application

SOV/153-58-5-16/25

ASSOCIATION: Yaroslavskiy tekhnologicheskiy institut i opytnyy zavod Ministerstva khimicheskoy promyshlennosti (Yaroslavl' Technological Institute and Test Plant of the Ministry of Chemical Industry)

SUBMITTED: December 28, 1957

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USTAVSHCHIKOV, B. F.

PHASE I BOOK EXPLOITATION SOV/4350

Soveshchaniye po khimii, tekhnologii i primeneniyu proizvodnykh piridina i khinolina. Riga, 1957

Khimiya, tekhnologiya i primeneniye proizvodnykh piridina i khinolina; materialy soveshchaniya (Chemistry, Technology and Utilization of Pyridine and Quinoline Derivatives; Materials of the Conference) Riga, Izd-vo AN Latviyskoy SSR, 1960. 299 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agencies: Akademiya nauk Latviyskoy SSR. Institut khimii; Vsesoyuznoye khimicheskoye obshchestvo.

Ed.: S. Bazhanova; Tech. Ed.: A. Klyavinya; Editorial Board: Yu. A. Bankovskiy, Candidate of Chemistry, E. V. Vanaga, Candidate of Chemistry (Resp. Ed.), L. P. Zalukayev, Doctor of Chemistry, and M. K. Kalnyn'.

PURPOSE: This book is intended for organic chemists and chemical engineers.

COVERAGE: The collection contains 33 articles on methods of synthesizing or producing pyridine, quinoline, and their derivatives from natural sources. No personalities are mentioned. Figures, tables, and references accompany the articles.

II. SYNTHETIC MEANS OF PREPARING PYRIDINES AND QUINOLINES

Sadykov, A. S., and O. S. Otroshchenko. [Sredneaziatskiy gosudarstvennyy universitet imeni V. I. Lenina (Central Asia State University imeni V. I. Lenin)]. Synthetic Studies

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Farberov, M. I., B. F. Ustavshchikov, A. M. Kut'in, F. Vasnova, and Ye. A. Yanush. [Yaroslavskiy tekhnologicheskiy institut; Opytnyy zavod Ministerstva khimicheskoy promyshlennosti (Yaroslavl' Technological Institute; Experimental Plant of the Ministry of the Chemistry Industry)]. Technical Syntheses of 2-Methyl-5-ethylpyridine and 2-Methyl-5-vinylpyridine and Their Fields of Application 97

Vanag, G. Ya. [Institut organicheskogo sinteza Akademii nauk Latviyskoy SSR (Institute for Organic Synthesis of the Academy of Sciences Latviyskaya SSR)]. The Transition From 1,3- Indandione to Pyridine Derivatives 111

Koton, M. M. [Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR (Institute for High Molecular Compounds of the Academy of Sciences USSR)]. Synthesis and Polymerization of Unsaturated Compounds of the Pyridine and Quinoline Series 119

Ardashev, B. I. [Rostovskiy gosudarstvennyy universitet (Rostov State University)]. Industrial Synthesis of Lepidine Bases 127

Kozlov, N. S. [Permskiy sel'skokhozyaystvennyy institut (Perm' Agricultural Institute)]. Catalytic Synthesis of Quinolinic Bases From Aromatic Amines and Acetylene 131

Minkin, V. I. [Rostov State University]. Preparation of Quinaldines From Sodium Acyl Anilides and Synthesis of N-Arylquinaldine Salts 139

Mikhaylov, G. I. [Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov (All-Union Scientific Research Institute for Chemical Reagents)]. Study of the Hydroxyquinoline Method of Synthesizing Quinolinic Bases 145

Tertov, B. A. [Rostov State University]. Synthesis of Derivatives of Quinoline and Some N-Aryllepidine Salts of Aryl Amines 151

Kozlov, N. S., and O. K. Koz'minykh [Permskiy gosudarstvennyy pedagogicheskiy institut (Perm' State Pedagogical Institute)]. Catalytic Syntheses of 2-Phenyl- 5,6-benzoquinoline Derivatives 159

Ardashev, V. I. [Rostov State University]. Catalytic Conversion of Acylated Aryl Amines to Quinolines 171

Zalukayev, L. P. Products of the Condensation of Aniline and Its N-Alkyl Derivatives With Acetaldehyde in a Neutral Medium 175

S/080/61/034/003/011/017
A057/A129

AUTHORS: Farberov, M. I.; Kut'in, A. M., Ustavshchikov, B. F., Vernova, T. P., Frolov, A. F.

TITLE: Investigation of the conditions for the synthesis of 2-methyl-5-vinylpyridine

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 3, 1961, 632 - 640

TEXT: Dehydrogenation of 2-methyl-5-ethylpyridine (MEP) was investigated in order to increase the yield of 2-methyl-5-vinylpyridine (MVP). Conditions were presented ensuring a 25 % yield of MVP in relation to the amount passed of MEP and 70 - 73 % yield in relation to decomposed MEP. Steam effects partial hydrolysis of pyridine bases and is thus not a completely inert diluent in dehydrogenation of MEP. Inhibitors for polymerization were investigated for the storage of MVP and separation from dehydrogenation products. Improvement of this dehydrogenation process is important for the manufacture of polymer materials. MVP is especially significant in the production of special types of synthesized latex and synthetic rubber according to R. Frank et al. (Ref. 1: Ind. Eng. Chem., 40, 879 (1948)), J. E. Pritchard and M. H. Opheim (Ref. 2: Ind. Eng. Chem., 46, 2242,

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Investigation of the conditions for .....

1954, 47, 863, 1955), H. E. Railsback and C. C. Biard (Ref. 3: Ind. Eng. Chem., 48, 1043, 1956), and V. L. Tsaylingol'd et al. (Ref. 4: Kauchuk i rezina, 9, 1958, 3, 1959, 9, 1959), or ion exchange resins in the manufacture of synthetic fibers. The raw material - MEP - is synthesized by Chichibabin's reaction between paraaldehyde and ammonia in liquid phase according to M. I. Faberov et al. (Ref. 5: Izv. Vuzov, Khim. i khim. tekhn., 5, 92, 1958) with a 70 - 75 % yield. The present experiments were carried out (in assistance of M. Yu. Tikhvinskaya and M. A. Loginova) by a method and with a laboratory assembly described in a prior paper (Ref. 11: ZhOKh, 30, 875, 1960). Vapor pressure and liquid - vapor equilibria in the system MEP - MVP was determined on an apparatus similar to Othmer's (Ref. 12: Ind. Eng. Chem., 45, 614, 1953) especially adapted for vacuum tests. Two catalysts were used: no. 1 based on ZnO and no. 2 on Fe_2O_3, containing 86 - 88 % of the basic component, some chromium oxide and small amounts of other components, which are not specified. Since considerable carbon deposition occurs during the dehydrogenation process, the catalyst had to be regenerated after 2 - 8 hours by passing an air-steam mixture at a maximum temperature of 650° - 700°C. Results of dehydrogenation experiments with steam as diluent in varying conditions are given in Table 1. It can be seen that the yield of MVP related to decomposition of MEP decreases with the contact time. This is apparently effected by

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Investigation of the conditions for .....

side reactions and increasing carbon deposition. The latter depends on the type of catalyst and the degree of dilution by steam. Steam cannot be considered as inert diluent, since with increasing dilution by steam the yield of catalyzate and of MVP (based on decomposed MEP) decreases, in spite of the fact that the yield of MVP based on the amount of passed MEP increases (Figure 1). Also with increasing dilution by steam formation of gaseous products (CO_2, H_2, NH_3 etc) and the content of pyridines (α- and γ -picoline, 2,5-lutidine, 3-vinylpyridine) in the catalyzate increases. This can be explained by the reaction of pyridine bases with steam, resulting in a partial dealkylation of MEP and formation of pyridines, or total rupture of the pyridine ring with ammonia evolution. A similar reaction was observed by A. A. Baladin et al. (Ref. 8: DAN SSSR, 110, 79, 1956) on α-picoline. These side reactions of hydrolysis occur with different rates on various catalysts, thus influencing the selection of the latter. Results on dehydrogenation of MVP with other diluents are given in Table 3. The observed effect of benzene can be explained by the fact that no side reactions of hydrolysis occur. Although nitrogen does not show these side reactions, no desorption of pyridine bases from the catalyst is effected by nitrogen (contrary to benzene) resulting in thermal decomposition of these substances. Fractionation of the catalyzate at 20 torr demonstrated that the fraction boiling at 63 -

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Investigation of the conditions for ....

- 69°C (20 torr) [Abstracter's note: Error in original paper - 200 torr instead of 20.] has an increased refraction index and contains considerable amounts of an unsaturated compound, apparently 3-vinylpyridine. Thus the following reaction and side products were obtained in dehydrogenation of MEP: (I) α-picoline, (II) 3-ethylpyridine, (III), 2,5-lutidine, (IV) 3-vinylpyridine, (V) 2-methyl-5-ethylpyridine, (VI) 2-methyl-5-vinylpyridine. The present authors consider (I), (II) and (III) as main cracking products of MEP (in presence of hydrogen), while (IV) is a cracking product of MVP. Different stabilizers for MVP were investigated (Figure 3) and it was observed that 0.1 % of sulfur is the optimum stabilizer in fractionation of MVP. For the storage of MVP an admixture of 0.001 % methol is most efficient in stabilizing MVP for several weeks, or 0.01 % methol for several months. Liquid-vapor equilibrium in the system MEP - MVP is shown in Figure 5. Corresponding experiments demonstrated that special conditions must be maintained if a 98 - 99 % concentration of MVP should be attained in fractionation. Thus in the system the maximum temperature should be 95°C (for highly concentrated MVP only 85°C), and highly effective inhibitors should be used. There are 6 figures, 4 tables and 12 references: 8 Soviet-bloc and 4 non-Soviet-bloc.

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S/080/61/034/003/011/017
A057/A129

Investigation of the conditions for .....

ASSOCIATIONS: Institut monomerov dlya SK (Institute of Monomers for Synthetic Rubber) and Yaroslavskiy tekhnologicheskiy institut (Yaroslavl' Technological Institute)

SUBMITTED: June 6, 1960.

Table 1: Dehydrogenation of MVP on the catalysts no. 1 and no. 2 using steam as diluent. Legend: (1) no. of the catalyst, (2) temperature(°C), (3) nominal contact time, sec., (4) volume velocity of the MEP supply (in ml/ml catalyst per h), (5) molar ratio H_2O/ MEP, (6) yield of the catalyzate (weight %), (7) yield of MVP based on the MEP passed (mole %), (8) yield of MVP based on the MEP decomposed (mole %), (9) carbon deposit on the catalyst (mole %, based on the MEP passed).

Card 5/9

USTAVSHCHIKOV, B.F.; FARBEROV, M.I.; PODGORNOVA, V.A.

Industrial synthesis of methacrylic acid based on isobutylene.
Khim. i khim. tekh. 1:79-89 '62. (MIRA 17:2)

1. Yaroslavskiy tekhnologicheskiy institut i Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka.

USTAVSHCHIKOV, B.F.; TITOVA, T.S.

Transformation of bivinyl adducts with furfurol by the Cannizzaro-Tishchenko reaction. Khim. i khim. tekh. 1:109-110 '62. (MIRA 17:2)

ACCESSION NR: AT4029922 S/3087/62/001/000/0079/0089

AUTHOR: Ustavshchikov, B. F.; Farberov, M. I.; Podgornova, V. A.

TITLE: Technical synthesis of methacrylic acid based on isobutylene

SOURCE: Yaroslavl'. Tekhnologicheskiy institut. Khimiya i khimicheskaya tekhnologiya, vol. 1 (8), 1962, 79-89

TOPIC TAGS: methacrylic acid, isobutylene, synthesis, monomer, nitrogen tetroxide, nitrosation, isobutyric acid

ABSTRACT: Methacrylic acid and its derivatives are one of the most important monomers for the production of synthetic materials. The requirements for methacrylic derivatives, in the Soviet Union alone, will increase ten fold within the next 20 years. Currently there is one method of obtaining methacrylic acid and methyl methacrylate based on the use of acetone and hydrogen cyanide as an initial raw material. The authors conducted a detailed study of the method for obtaining methaerylic acid from isobutylene and nitrogen tetroxide. The reaction was shown graphically along with the various effects of temperature and velocity on the yield. Diagrams of the equipment used were given. The conditions of the isobutylene reaction with nitrogen tetroxide produced α-oxybutyric acid with a 75-80% yield as a

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ACCESSION NR: AT4029922

basic product. A nitrosation reaction occurred rather than a nitration reaction. The fundamental intermediate product of the reaction, α-nitrate isobutyric acid was formed from the isonitroso compound-oxime of α-nitrato isobutyric aldahyde. The catalyst and conditions were selected which permitted methacrylic acid to be obtained from α-oxyisobutyric acid with a yield approximating the quantitative. Orig. art. has: 6 figures.

ASSOCIATION: Yaroslavskiy tekhnologicheskiy institut i nauchno-issledovatel'skiy institut monomerov dlya SK (NIIMK) (Yaroslavl technological institute and scientific research institute of monomers for SK (NIIMK)).

SUBMITTED: 00 DATE ACQ: 29Apr64 ENCL: 00

SUB CODE: CH NO REF SOV: 006 OTHER: 006

Card 2/2

Synthesis of methacrylic acid ...

NH_4OH to solutions of $CaNO_3$ and $CaCl_2$. It is dried at 110 to 120°C and activated and regenerated at 350 to 400°C in an air-steam mixture. The dehydration is achieved by passing 20 to 30% aqueous solution of α-oxyisobutyric acid over the catalyst at 250 to 300°C. The products contain 10 to 15% methacrylic acid. The yield increases with increasing temperature up to 250°C, which is the optimum temperature for the process. The optimum space velocity for α-oxyisobutyric acid is about 1.3 litres/litre of catalyst/hour. These conditions give 77.7% yield of methacrylic acid (based on the amount of α-oxyisobutyric acid passed). There are 4 figures.

ASSOCIATIONS: Yaroslavskiy tekhnologicheskiy institut
(Yaroslavl' Technological Institute)
Nauchno-issledovatel'skiy institut monomerov dlya SK
(Scientific Research Institute of Monomers for
Synthetic Rubber)

USTAVSHCHIKOV, B. F.; FARBEROV, M. I.; PODGORNOVA, V. A.

Synthesis of methacrylic acid based on isobutylene. Neftekhimia 2 no.4:592-599 Jl-Ag '62. (MIRA 15:10)

1. Yaroslavskiy tekhnologicheskiy institut i Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka.

(Methacrylic acid) (Propene)

FROLOV, A.F.; LOGINOVA, M.A.; USTAVSHCHIKOV, B.F.

Separation of methacrylic acid - water mixtures. Neftekhimiia 2 no.5:766-770 S-O '62. (MIRA 16:1)

1. Yaroslavskiy tekhnologicheskiy institut.
(Methacrylic acid)

USTAVSHCHIKOV, B.F.; PODFORNOVA, V.A.; DORMIDONTOVA, N.V.; FARBEROV, M.I.

Course of the reaction between simplest α-olefins and liquid nitrogen tetroxide. Dokl. AN SSSR 157 no.1:143-146 Jl '64 (MIRA 17:8)

1. Yaroslavskiy tekhnologicheskiy institut. Predstavleno akademikom M.I. Kabachnikom.

USTAVSHCHIKOV, B.F., kand. khim. nauk, dots., red.; ISTOMIN, N.V., kand. fiz.-mat. nauk, dots., red.

[Authors' abstracts and theses of papers presented at the 14th Scientific Conference of the Yaroslavl Technological Institute held in 1962] Avtoreferaty i tezisy dokladov. IAroslavl', M-vo vysshego i srednego spetsial'nogo obrazovaniia RSFSR, 1962. 103 p. (MIRA 17:3)

1. Yaroslavl'. Tekhnologicheskiy institut. Nauchnaya konferentsiya. 14th, Yaroslavl', 1962.

BUSAKOVA, M.S.; USTAVSHCHIKOV, B.F.; TER-YAN, Ya.I.

Polarographic study of the kinetics of hydrolysis of nitric acid esters. Part 1: Hydrolysis of isobutyric acid α-nitrates. Kin. i kat. 5 no.3:552-555 My-Je '64. (MIRA 17:11)

1. Yaroslavskiy tekhnologicheskiy institut i Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka.

FROLOV, A.F.; LOGINOVA, M.A.; USTAVSHCHIKOV, B.F.

Liquid - liquid equilibrium in the system acetic acid - nitric acid - water - chloroform. Zhur. fiz. khim. 38 no.7:1837-1839 Jl '64. (MIRA 18:3)

1. Yaroslavskiy tekhnologicheskiy institut.

USTAVSHCHIKOV, B.F.; FARBEROV, M.I.; TITOVA, T.S.; DEGTYAREV, Ye.V.

Nicotinic acid. Metod. poluch. khim. reak. i prepar. no.11: 82-83 '64. (MIRA 18:12)

1. Yaroslavskiy tekhnologicheskiy institut. Submitted April 1964.

FROLOV, A.F.; YAROVIKOVA, M.M.; USTAVSHCHIKOV, B.F.; NIKITINA, N.S.

Liquid-liquid equilibrium in the system methyl methacrylate - methyl alcohol - water. Izv.vys.ucheb.zav.; khim.i khim.tekh. 8 no.4:570-573 '65. (MIRA 18:11)

1. Yaroslavskiy tekhnologicheskiy institut, kafedra tekhnologii osnovnogo organicheskogo sinteza i sinteticheskogo kauchuka.

L 13497-66 EWT(m)/EWP(j) RM

ACC NR: AP6002074 SOURCE CODE: UR/0204/65/005/006/0873/0879 60 59

AUTHOR: Ustavshchikov, B. F.; Podgornova, V. A.; Dormidontova, N. V.; Faberov, M. I.

ORG: Yaroslav Institute of Technology (Yaroslavskiy tekhnologicheskiy institut)

TITLE: Synthesis of methacrylic acid based on isobutylene. Reaction mechanism of isobutylene with N_2O_4

SOURCE: Neftekhimiya, v. 5, no. 6, 1965, 873-879

TOPIC TAGS: chemical reaction, IR absorption, isobutylene, nitration, nitric oxide, IR spectrum, spectrophotometer, acrylic acid, organic nitroso compound, nitrate

ABSTRACT: The mechanism of reaction of isobutylene with liquid N_2O_4 was studied by examining the IR spectra of the reaction products. The object of this work was to examine the feasibility of synthesizing methacrylic acid by reacting isobutylene with liquid N_2O_4. The IR absorption spectra were taken with IKS-14 spectrophotometer with a NaCl prism. The polarographic analyses of the reaction products were made with a VNR polarograph made by Orion Company. The reaction was conducted at 0°C and at 20°C in dichloroethane solvent. The nitrosonitrate of isobutylene

UDC: 547.391.3.05:547.313.4-125:546.174

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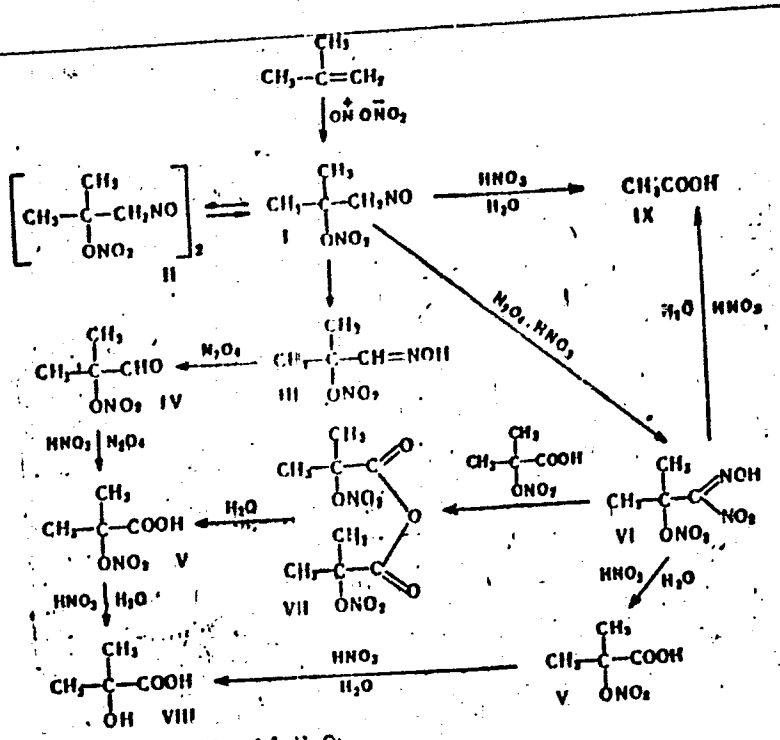
ACC NR: AP6002074

was detected in the product only when the reaction was conducted at 0°C. It is claimed that this nitrosonitrate represents the primary reaction product. Reaction of isobutylene with liquid N_2O_4 is shown in fig. 1. The authors thank Ya. I. Tur'yan for valuable consultation and polarographic analysis of the reaction products. Orig. art. has: 5 figures, 1 table.

Card 2/3

L 13497-66

ACC NR: AP6002074



Reaction of isobutylene with liquid N_2O_4.

SUB CODE: 07 / SUBM DATE: 13Mar65 / ORIG REF: 008 / OTH REF: 006

Card 3/3

FROLOV, A.F.; LOGINOVA, M.A.; USTAVSHCHIKOV, B.F.

Separation of mixtures of acetic and nitric acids. Zhur.prikl.khim. 38 no.6:1386-1389 Je '65. (MIRA 18:10)

1. Yaroslavskiy tekhnologicheskiy institut.

FARBEROV, M.I.; USTAVSHCHIKOV, B.F.; TITOVA, T.S.

Laccinchomeronic acid. Metod. poluch. khim. reak. i prepar. no.11:58-59 '64. (MIRA 18:12)

1. Yaroslavskiy tekhnologicheskiy institut. Submitted April 1964.

FARBEROV, M.I.; USTAVSHCHIKOV, B.F.; KUT'IN, A.M.; BARANOVA, T.I.

Isocinchomeronic acid. Metod. poluch. khim. reak. i prepar. no.11:60-62 '64. (MIRA 18:12)

1. Yaroslavskiy tekhnologicheskiy institut i Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka.

FARBEROV, M.I.; USTAVSHCHIKOV, B.F.; KUT'IN, A.M.; BUKHAREVA, V.A.

5-Ethyl-2-(β-hydroxyethyl)-pyridine. Metod. poluch. khim. reak. i prepar. no.1:108-109. '64. (MIRA 18:12)

1. Yaroslavskiy tekhnologicheskiy institut i Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo kauchuka.

RUSAKOVA, M.S.; TUR'YAN, Ya.I.; USTAVSHCHIKOV, B.F.

Polarography of nitric acid esters. Mechanism of electroreduction. Elektrokhimiia 1 no.7:854-857 Jl '65. (MIRA 18:10)

1. Yaroslavskiy tekhnologicheskiy institut i Yaroslavskiy nauchno-issledovatel'skiy institut monomerov.

USTAVSHCHIKOV, B.F.; PODGORNOVA, V.A.; DORMIDONTOVA, N.V.; FARBEROV, M.I.

Synthesis of methacrylic acid based on isobutylene. Mechanism of the reaction of isobutylene with N_2O_4. Neftekhimiia 5 no.6: 873-879 N-D '65. (MIRA 19:2)

1. Yaroslavskiy tekhnologicheskiy institut. Submitted March 13, 1965.

AUTHORS: Kryukov, S. I., Kut'in, A. M., Levskaya, G. S., 153-58-1-13/29
Tepenitsyna, Ye. P., Ustavshchikova, Z. F., Farberov, M. I.

TITLE: An Improved Method of the Synthesis of Triethyl-Aluminum (Uluchshennyy sposob sinteza trietilalyuminiya)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Khimiya i khimicheskaya tekhnologiya, 1958, Nr 1, pp. 86-93 (USSR)

ABSTRACT: The authors give a survey on the publications of trialkyl-aluminum as specific catalyst, both alone, as well as with cocatalysts for olefinic polymerization (references 1 to 3), and they compare with each other the known methods of production of aluminum-organic compounds (references 4 to 6). The authors selected the method by Grosse and Meviti (Mavity, ref. 5) as the most convenient one. A)- Production of ethylaluminum sesquichloride (mixture of ethylaluminum--dichloride and diethyl-aluminum-chloride). The first stage of the process according to reference 5 proved to be rather incomplete. It is difficult to be controlled, has a long period of induction and often leads to the complete destruction of the products, sometimes with explosion. The

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authors tried various initiators at atmospheric pressure (crystalline iodine, ethylaluminum-sesquichloride, ethylbromide and a mixture of these substances). Table 1 shows the influence of individual initiators on the period of reaction. Ethylbromide acted most efficiently. Table 2 shows the influence of the initial temperature with the supply of ethylchloride on the reaction-period. Optimum conditions for the carrying out of the process were selected from the obtained test results. Further tests were carried out on an enlarged plant (figure 1). The laboratory results were confirmed: It was possible to reduce the reaction--period to from 2 to 3 hours. B)- Reaction of symmetrization of ethylaluminum-sesquichloride. In order to obtain triethylaluminum, the above reaction must be carried out with the participation of metallic sodium. According to reference 5, various insufficiencies exercised a disturbing effect in this connection. The authors found the conditions for removing them: 1)- Sodium ought to be used in fine dispersion, the surplus of Na must not exceed 5 to 10% of the theoretically required quantity. 2) - Sesquichloride must be introduced in portions as a 20 to 30% solution in hydrocarbons. 3) - The temperature of reaction must not

exceed 130° and an intense agitation should be guaranteed. The gasoline-fraction "galosha" (boiling above 100°) proved most effective among several tested solvents. The yield of triethylaluminum amounted to 70 to 76% of the charged sesquichloride under the selected optimal conditions. A certain quantity of partly oxidized triethylaluminum was proved in the produced triethylaluminum. The inactive part of the catalyst formed a mixture of all 3 possible ethoxy--compounds. An experimental part follows. C) - Production of aluminum sesquichloride. According to the method described here, a 99% yield of that theoretically possible was obtained. The two (paragraph A) components were present in the mixture in approximately equimolar quantities. D) - The reaction of symmetrization was carried out in a device shown in figure 3. A filter required for this purpose is shown in figure 4.
There are 4 figures, 2 tables, and 12 references, 3 of which are Soviet.

ASSOCIATION: Yaroslavskiy tekhnologicheskiy institut i opytnyy zavod Ministerstva khimicheskoy promyshlennosti. Kafedra

An Improved Method of the Synthesis of Triethyl-Aluminum 153-58-1-13/29

tekhnologii osnovnogo organicheskogo sinteza i SK
(Yaroslavl' Technological Institute and the Experimental Plant of the Ministry for Chemical Industry, Chair for the Technology of General Organic Synthesis and SK)

SUBMITTED: September 23, 1957

Card 4/4

S/081/60/000/017/013/018
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 17, p. 372, # 70452

AUTHORS: Kryukov, S.I., Kut'yin, A.M., Levskaya, G.S., Tepenitsyna, Ye.P., Ustavshchikova, Z.F., Farberov, M.I.

TITLE: Technical Mode of Triethylaluminum Synthesis

PERIODICAL: Uch. zap. Yaroslavsk. tekhnol. in-ta, 1959, Vol. 3, pp. 5-17

TEXT: The authors developed a technical mode of preparing ethylaluminumsesquichloride (I) with a yield of about 100% on the basis of a method described (Grisse, A.U., Maulty, J.M., Organ. Chem., 1940, No. 5, p. 196) which consists in the interaction of C_2H_5Cl (II) and Al in the presence of 5-10% C_2H_5Br (III) with relation to Al. I_2, (I) and their mixtures were tested as initiators yielding unsatisfactory results. It is assumed that the process is initiated by intermediately forming ethylaluminumsesquibromide, in the case that III is used. I is transformed into $(C_2H_5)_3Al$ (IV) by processing with dispersed Na metal in organic solvents (benzine, rubber, refined kerosene, xylene, isooctane). Na is taken in excess of 5-15%. I is introduced into the reaction by portions in the form of

Card 1/2

Terminal Yield of Triethylaluminum Synthesis

20-30% solution in hydrocarbon, the yield of IV is 70-76% in relation to I, and 70% in relation to II or Al. All the experiments are carried out in dry N_2 atmosphere, free of O_2. Amounts of 40 g Al and 24 g III are heated, while stirring, to 50°C and 160 g (110%) II is added by portions of 10 ml; the reaction lasts 8 hours. I is obtained in the form of a colorless or slightly colored liquid, the yield is 99%, boiling temperature 117-122°C/50 mm. In 100 g of the solvent 29 g Na is heated at 100°C, into the hot dispersion 91.4 g I is added during 20 min in the form of a 30% solution in benzine-rubber (boiling temperature 100-115°C), mixed for 30 minutes at 105-110°C and filtrated; the precipitate is washed with 250 ml of solvent. IV is obtained in the form of a colorless liquid, self-sublimating in air, the yield is 32.5 g, the boiling temperature 100-107°C/10 mm, d 0.872. The authors present two tables and schematic diagrams of metallic apparatus and laboratory equipment including descriptions.

S. Davydova

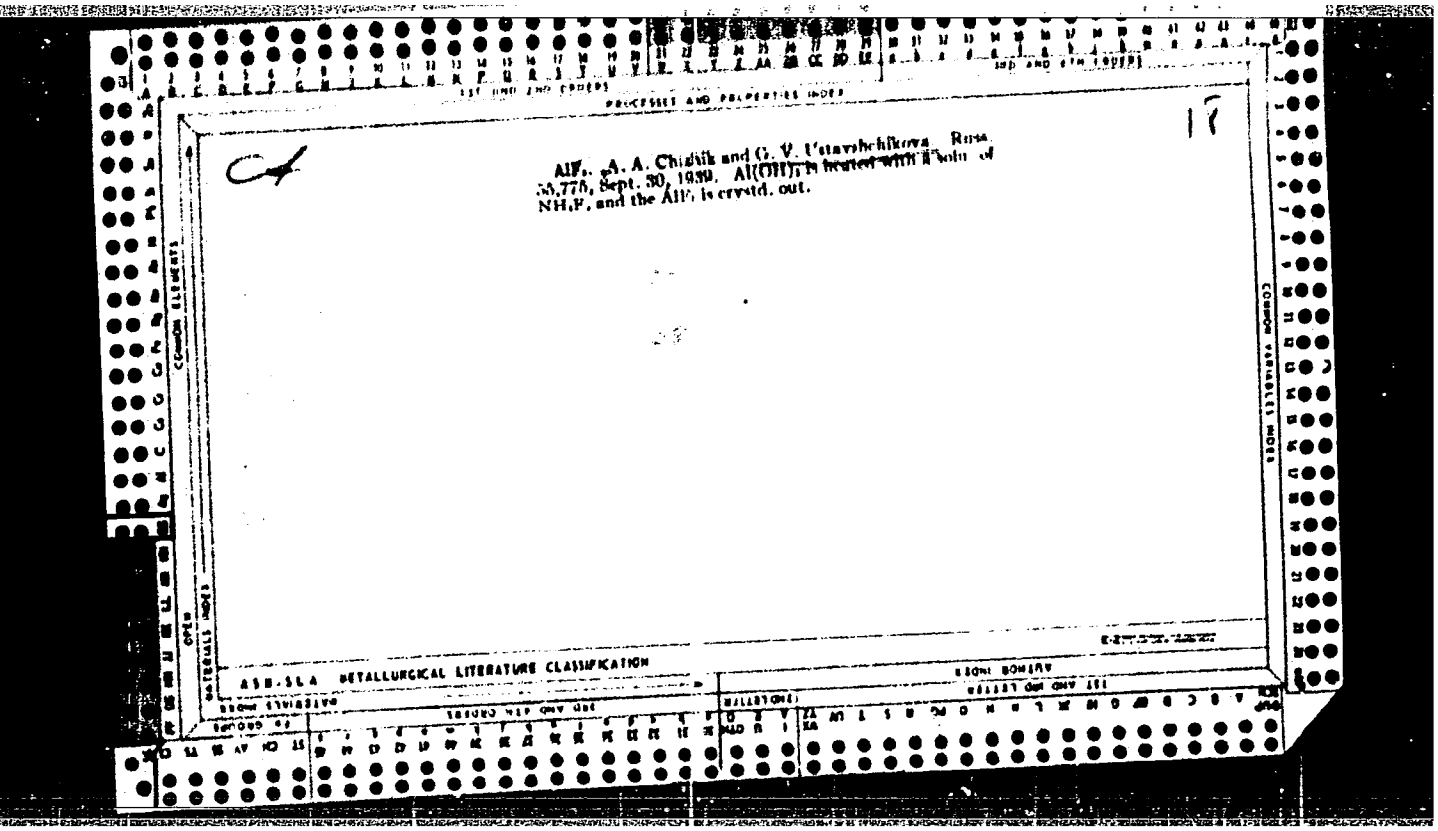
Translator's note: This is the full translation of the original Russian abstract.

BONDARENKO, A.V.; KUT'I..., ..., USTAVSHCHIKOVA, Z.F.; FARBEROV, M.I.

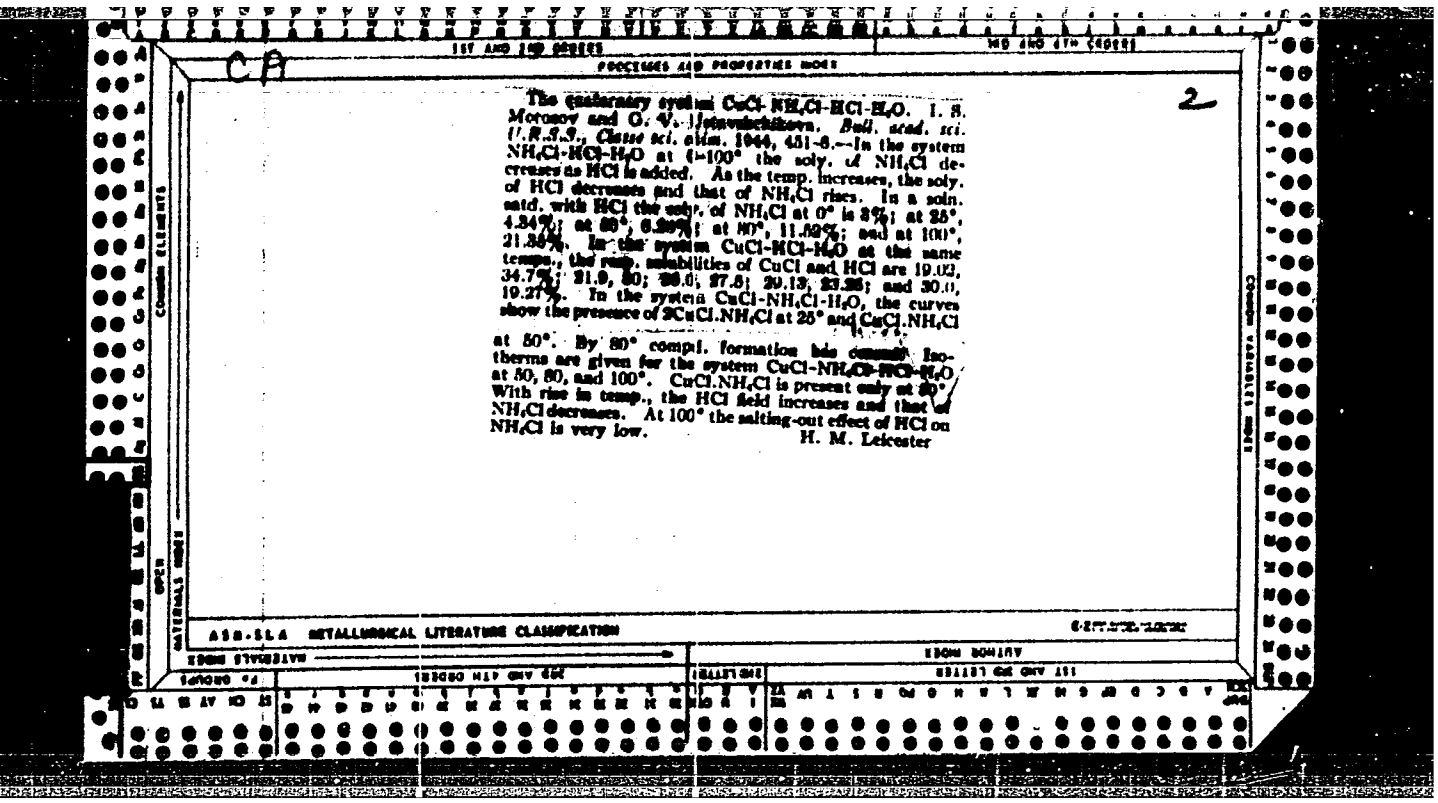
Synthesis of tert-butylbenzoic acid. Izv.vys.ucheb.zav.; khim.i khim.tekh. 4 no.3:472-485 '61. (MIRA 14:10)

1. Yaroslavskiy tekhnologicheskiy institut i nauchno-issledovatel'skiy institut sinteza monomerov dlya sinteticheskogo kauchuka, kafedra tekhnologii osnovnogo organicheskogo sinteza i sinteticheskogo kauchuka.
(Benzoic ...)

USTAVSHCHIKOVA, G.V.,
G. G. UKAZOV, Tzvetnuie Metal. 10, No. 6, 109-30,
(1935)

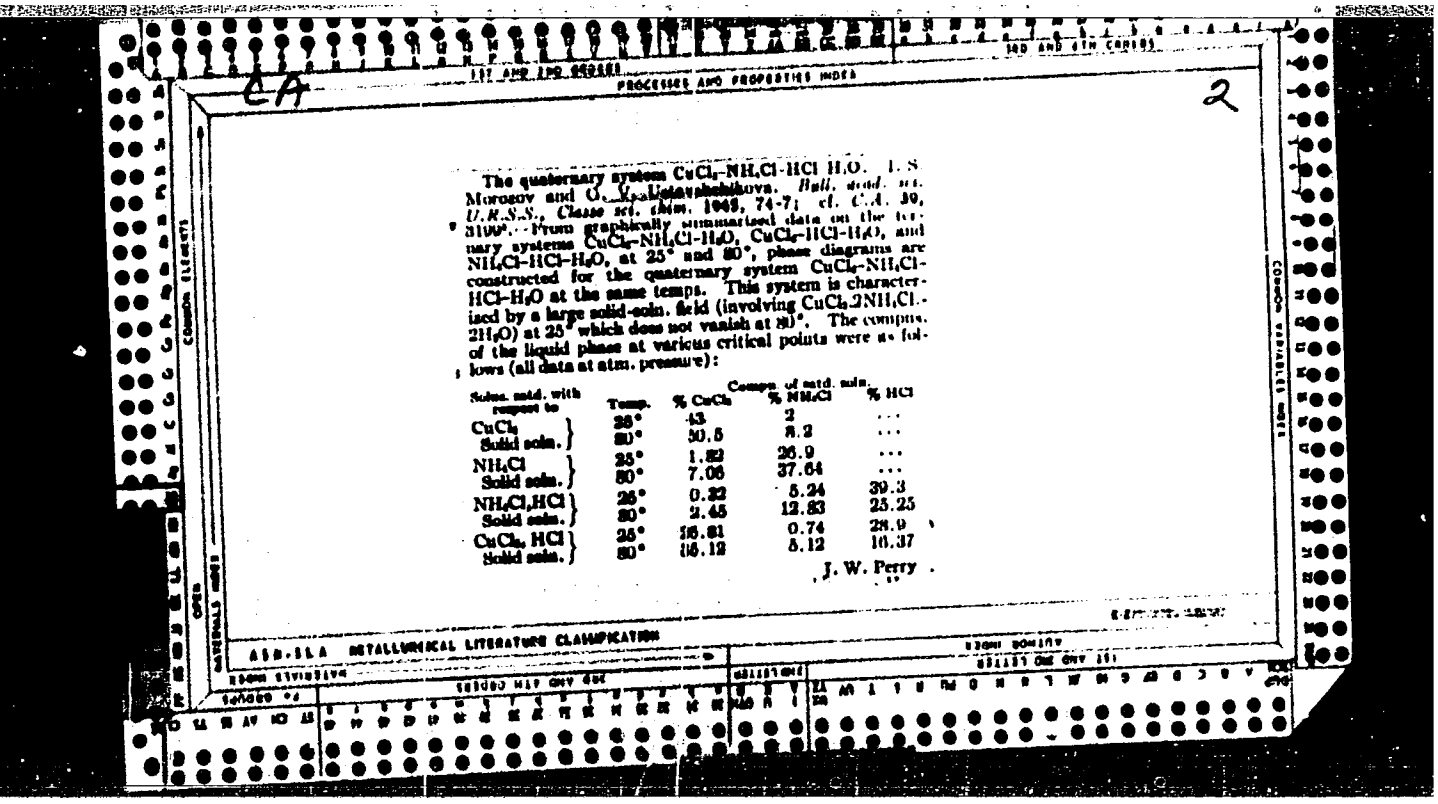


APPROVED FOR RELEASE: 04/03/2001 CIA-RDP86-00513R001858220002-3"



The quaternary system CuCl-NH_4Cl-HCl-H_2O. I. S. Morozov and G. V. Ivanovskikhova. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1944, 451-6.—In the system NH_4Cl-HCl-H_2O at 0–100° the soly. of NH_4Cl decreases as HCl is added. As the temp. increases, the soly. of HCl decreases and that of NH_4Cl rises. In a soln. satd. with HCl the soly. of NH_4Cl at 0° is 8%; at 25°, 4.84%; at 80°, 8.89%; at 80°, 11.62%; and at 100°, 21.36%. In the system CuCl-HCl-H_2O at the same temps., the resp. solubilities of CuCl and HCl are 19.02, 34.7%; 21.9, 30; 26.6, 27.6; 29.13, 23.25; and 30.0, 19.27%. In the system CuCl-NH_4Cl-H_2O, the curves show the presence of $2CuCl.NH_4Cl$ at 25° and $CuCl.NH_4Cl$ at 50°. By 80° compl. formation has ceased. Isotherms are given for the system CuCl-NH_4Cl-HCl-H_2O at 50, 80, and 100°. $CuCl.NH_4Cl$ is present only at 50°. With rise in temp., the HCl field increases and that of NH_4Cl decreases. At 100° the salting-out effect of HCl on NH_4Cl is very low.

H. M. Leicester



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2

The quaternary system $CuCl_2$-NH_4Cl-HCl H_2O. I. S. Morozov and O. Ya. Ustavshchikova. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1949, 74-7; cf. *C.A.* 39, 3100^g. From graphically summarized data on the ternary systems $CuCl_2$-NH_4Cl-H_2O, $CuCl_2$-HCl-H_2O, and NH_4Cl-HCl-H_2O, at 25° and 80°, phase diagrams are constructed for the quaternary system $CuCl_2$-NH_4Cl-HCl-H_2O at the same temps. This system is characterized by a large solid-soln. field (involving $CuCl_2 2NH_4Cl \cdot 2H_2O$) at 25° which does not vanish at 80°. The compns. of the liquid phase at various critical points were as follows (all data at atm. pressure):

Solns. satd. with respect to	Temp.	Compn. of satd. soln., % $CuCl_2$	% NH_4Cl	% HCl
$CuCl_2$ Solid soln.	25°	43	2	...
	80°	30.5	8.2	...
NH_4Cl Solid soln.	25°	1.82	26.9	...
	80°	7.06	37.64	...
NH_4Cl,HCl Solid soln.	25°	0.32	5.24	39.3
	80°	2.45	12.83	25.25
$CuCl_2$, HCl Solid soln.	25°	16.81	0.74	28.9
	80°	16.12	5.12	16.37

J. W. Perry

FROLOV, A.F.; LOGINOVA, M.A.; SHVETSOV, O.K.; USTAVTSCHIKOV, B.F.

Liquid- vapor equilibrium in the system methyl alcohol - methyl methacrylate. Zhur. fiz. khim. 38 no.5:1303-1304 My '64. (MIRA 18:12)

1. Yaroslavskiy tekhnologicheskiy institut. Submitted June 7, 1963.

SHUBENKO, V.A.; USTELEMOV, V.N.

Devices for measuring the pressure exerted by the metal on the rollers in rolling operations. Trudy Ural. politekh. inst. no.106:137-144 '60. (MIRA 15:5)
(Rolling mills--Electronic equipment)
(Electronic measurements)

SALAZKIN, A.A.; [illegible]ENTSEVA, E.P.

Zooplankton in the floodplain bodies of water of the lower Ob' and lower Irtush Rivers and some characteristics of its development. Zool. zhur. 44 no.6:818-825 '65. (MIRA 18:10)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut ozernogo i rechnogo rybnogo khozyaystva, Leningrad.

UTEKHIN B. P. and BAKEYEVA E. N.

Res. Inst. for Pig-husbandry, Poltava. * Method of investigation of intestinal digestion in pigs FIZIOL. ZHURN. SSSR 1954, 40/2 (235-236) Illus. 2 (Russian text)

SO: Excerpta Medica Section II Vol 7 N. 12

KARELIN, V. Ye.; PALATNIK, I. B.; USTIMENKO, B. P.

"An investigation of heat and momentum transfer processes in a compressible turbulent jet in a uniform flow."

report submitted for 2nd All-Union Conf on Heat & Mass Transfer, Minsk, 4-12 May 64.

Power Inst, AS KazSSR.

USTENKO, A., inzhener-kapitan

A strong wind and the mooring of a helicopter. Vest. Vozd. Fl. no.12:61-63 D '61. (MIRA 15:3)
(Helicopters—Maintenance and repair)

ZAGORDAN, A., inzh.-podpolkovnik; USTENKO, A., inzh.-kapitan

To the pilot about the MI-4 helicopter. Av.i kosm. 46 no.7: 87-88 Jl '63. (MIRA 16:8)

(Helicopters)

USTENKO, A. A., Cand Tech Sci -- (diss) "Research into the mechanism of foramtion of fibers in the production of mineral and glass wool by draft method." Moscow, 1960. 17 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Labor Red Banner Construction Engineering Inst im V. V. Kuybyshev); 200 copies; price not given; (KL, 22-60, 139)

USTENKO, A.A., kand.tekhn.nauk

Study of the fiber-forming mechanism in the production of mineral and glass wool. Stroi.mat. 9 no.9:32-35 S '63. (MIRA 16:10)

BARBARINA, T.M.; BUBYR', N.F.; BUST, L.N.; VEL'SOVSKIY, V.N.; GORLOV, Yu.P.; GRIBANOVSKIY, V.G.; DROZDOV, I.Ya.; YEREMIN, I.A.; ZEZIN, V.G.; KEVESH, P.D.; KOCHAROV, E.P.; KOSYREVA, Z.S.; LEVIN, S.N.; MAKHNOVICH, A.T.; MERZLYAK, A.N.; RODOV, E.S.; ROZHNOV, A.I.; SEREBRYANSKAYA, B.I.; SUKHAREV, M.F.; USTENKO, A.A.; KHOMENKO, Z.S.; SHMIDT, L.M.; ETIN, A.O.; YAKHONTOVA, N.Ye.; KITAYTSEV, Vladimir Andreyevich, prof., doktor tekhn. nauk, red.; SKRAMTAYEV, B.G., glav. red.; TROKHIMOVSKAYA, I.P., zam. glav. red.; KRAVCHENKO, I.V., red.; KITAYGORODSKIY, I.I., red.; KRZHEMINSKIY, S.A., red.; ROKHVARGER, Ye.L., red.; BALAT'YEV, P.K. red.

[Manual on the manufacture of heat insulating and acoustical materials] Spravochnik po proizvodstvu teploizoliatsionnykh i akusticheskikh materialov. Moskva, Stroizdat, 1964. 524 p. (MIRA 18:1)

USTENKO, A.S.

Lighten the load of trackwalkers. Put' i put. khoz. no. 8:43 Ag '58. (MIRA 11:8)

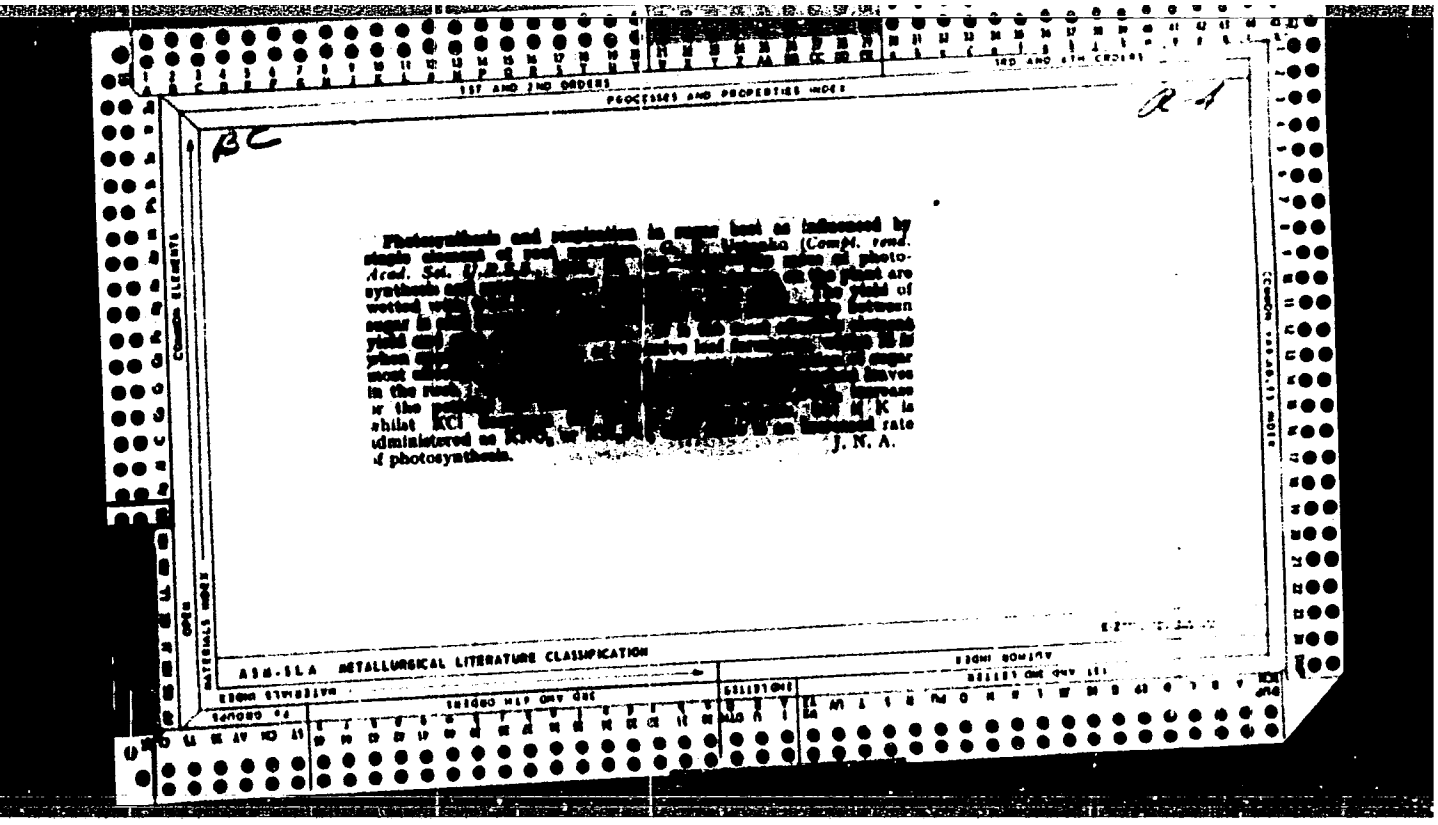
1. Zamestitel' nachal'nika distantsii puti, stantsiya Kurort Borovoye Kazakhskoy dorogi.
(Railroads--Track)

USTENKO, F.

ZAYTSEV, A.; SIKUL'SKIY, I.; SKOBELKIN, I.; USTENKO, F.; YEGOROV, V.; ORLOV, A.; SHKUNOV, S.

Free the state Bank from nonbanking functions. Den. i kred. 16 no.1: 51-55 Ja '58. (MIRA 11:3)

(Banks and banking)



1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

BC

2-4

Effect of mineral salts on photosynthesis in relation to amount of [illegible] in the leaf. G. [illegible] Ustenko (Compt. rend. Acad. Sci. U.R.S.S. [illegible].—When 0·1N-NH_4NO_3, $Ca(H_2PO_4)_2$, 0·01N-[illegible]O_4 [illegible] injected into detached leaves of sugar beet [illegible] is [illegible] photosynthesis, which is only slightly greater [illegible] leaves are kept in the dark. Since [illegible] of org. matter [illegible] the leaf tissue [illegible] and [illegible] photosynthesis causes [illegible] ism, [illegible] increase [illegible] occur when [illegible] salts and the [illegible] the effect of these factors separately [illegible] that the rate of photosynthesis [illegible] and absorption of mineral elements by the plant are closely inter-related. 0·1N-KCl and 0·01N-H_3BO_3 when injected into the leaf decrease photosynthetic activity.

J. N. A.

COMMON ELEMENTS

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

PAVLOV, A.V.; USTENKO, O.P.

Heat balance and radiation regime in corn fields. Izv. AN SSSR. Ser. geog. no.6:47-55 N-D '65. (MIRA 18:11)

PAVLOV, A.V.; USTENKO, G.P.

Some features of the formation of the potato harvest under irrigation in the Southeast. Fiziol.rast. 7 no.1:100-103 '60. (MIRA 13:5)

1. Stalingrad Agricultural Institute.
(Volga-Don Canal region--Potato)

KARPENKO L.P.; PLYASKIN, Yu.A.; USTENKO, G.P.

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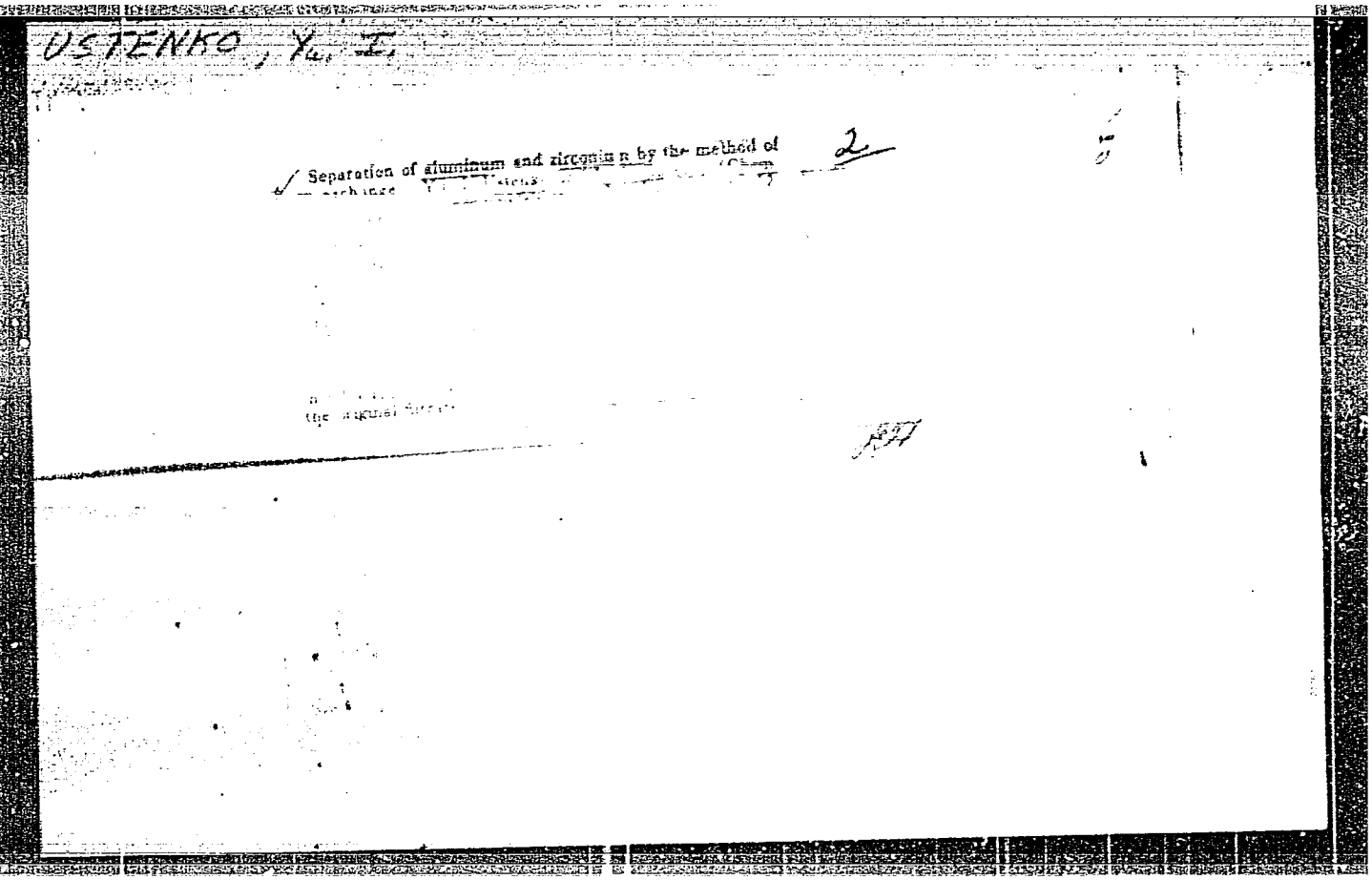

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